

Figure 1 A

ATGGAGGGTACAGTTAGGGCTAGGGAGGGGTCTACCCCCGGCCGCTCCAGACCTATCGA	60
M E V Q L G L G R V Y P R P P S K T Y R	
GGAGCTTTCCAGAACCTGTTCCAGAGTGTGCGCGAAGTGATCCAGAACCCGGGCCCCAGG	120
G A F Q N L F Q S V R E V I Q N P G P R	
CACCCCTGAGGCCGTGAGCGCAGCACCTCCCGGTGCCCATTTGCAGCAGCAGCAGCAGCAG	180
H P E A V S A A P P G A H L Q Q Q Q Q Q	
CAGCAGCAGCAGGGAGACCAGTCCTCGGCAGCAGCAGCAGCAGCAACAGCAGGGTGACGATGGC	240
Q Q Q Q E T S P R Q Q Q Q Q Q Q G D D G	
TCTCCCAAGCGCAGAGCAGAGGGCCCCACAGGCTACCTGGCTCTGGATGAGGAACAGCAG	300
S P Q A Q S R G P T G Y L A L D E E Q Q	
CCTTCCCAACAGCGGTCAAGCTCCAGGGGCCATCCGGAGAGTGCTTGCCTTCCAGAGCCT	360
P S Q Q R S A S K G H P E S A C V P E P	
GGAGTGACTTCGGCCACCGGCAGGGGGCTGCAGCAGCAGCAGCCAGCACCACCGGACGAG	420
G V T S A T G K G L Q Q Q Q P A P P D E	
AATGACTCAGCTGCCCCATCCACATTGTCACTGCTGGGCCCACTTTCCCGGGCTTAAGT	480
N D S A A P S T L S L L G P T F P G L S	
AGCTGTTCCACCGATCTTAAGGACATCCTGAGCGAGGCTGGAAACCATGCACTCCTTCAG	540
S C S T D L K D I L S E A G T M Q L L Q	
CAGCAGCGGCAGCAGCAGCAGCAGCAGCAGCAGCAACAGCAGCAGCAGCAGCAGCAGCAG	600
Q Q R Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q Q	
CAGCAGGAGGTAGTATCAGAAAGTAGCAGCAGCGGGAGAGCAAGGGAGGCCCGCGGTGCT	660
Q Q E V V S E G S S S G R A R E A A G A	
TCCACCTCCTCCAGGACAGTTACCTAGGTGGCAGTTCGACCATCTCGGACAGCGCCAGG	720
S T S S K D S Y L G G S S T I S D S A K	
GAGTGTGTAAAGGACAGTGTGCGGTGTCATGGGTTTGGGTGTGGAGGCATTGGAAACATCTG	780
E L C K A V S V S M G L G V E A L E H L	
AGCCCTGGGGAAACAGCTTCGGGGGGATTGTATGTACGCCCCGCTCCTGGGAGGTCCACCC	840
S P G E Q L R G D C M Y A P L L G G P P	
GCCGTACGTCTTGGCTCCGCTGGCCGAATGCAAGGTTCTCTGCTGGATGACGGCCCCG	900
A V R P C A P L A E C K G S L L D D G P	

[illegible]

TCTTGTGCGCCTCCGGAAATGCTATGAAGCAGGGGATGACTCTGGGAGCCCGGAAGCTAAAG	1860
S C R L R K C Y E A G M T L G A R K L K	
AAACTGGGGAATCTGAAACTGCAGAGGGAAGGAGAGGCTTCCAATGTCACCAAGCCCCACT	1920
K L G N L K L Q E E G E A S N U T S P T	
GAGGAGCCAAACCAGAGCTGACGGTGTACACATTGAAGGCTATGAGTGTACGCCCATC	1980
E E P T Q K L T V S H I E G Y E C Q P I	
TTTCTGAATGTCCTTGAAGCCATCGAGCCAGGCGTGGTGTGTGCTGGACATGACACAAC	2040
F L N U L E A I E P G U U C A G H D N N	
CAGCCCGACTCCTTTGCAGCCTTGCTCTCTAGCCTTAATGAATTGGGTGAAGGCGAGCTT	2100
Q P D S F A A L L S S L N E L G E R Q L	
GTACATGTGGTCAAGTGGGCCAAGGCCTTGCCGGGCTTCCGCACCTGCACGTGGATGAC	2160
V H U U K W A K A L P G F R N L H U D D	
CAGATGGCAGTCATTCACTACTCCTGGATGGGGCTCATGGTGTGTTGCCATGGGCTGGCGA	2220
Q M A U I Q Y S W M G L M U F A M G W R	
TCCTTCACCAATGTCAACTCCAGGATGCTCTACTTCGCCCTGACCTGGTTTTCAATGAG	2280
S F T N U N S R M L Y F A P D L U F N E	
TACCGCATGCACAAGTCCCGGATGTACAGCCAGTGTGTCCGAATGAGGCACCTCTCTCAA	2340
Y R M H K S R M Y S Q C U R M R H L S Q	
GAATTTGGATGGCTCCAATCAGCCCGCAGGAATTTTGTGCATGAAGGCGCTGCTGCTA	2400
E F G W L Q I T P Q E F L C M K A L L L	
TTACGCATTATTCCAGTGGATGGGCTGAAAAATCAAAAATTCTTTGATGAAGTTTCAATG	2460
F S I I P U D G L K N Q K F F D E L R M	
AACTACATCAGGAAGTTGATCGTATCATTGCTTGCAGAGAGAAAAATCCACATCCTGC	2520
N Y I K E L D R I I A C K R K N P T S C	
TCAAGGCGCTTCTACCAAGCTCACCAGCTCCTGGACTCTGTGCAACCTATTGCTCGAGAG	2580
S R R F Y Q L T K L L D S U Q P I A R E	
CTGCATCAGTTCACTTTTGACCTGCTAATCAAGTCCACATGGTGAGCGTGGACTTTCCA	2640
L H Q F T F D L L I K S H M U S U D F P	
GAAATGATGGCAGAAATCATCTCCGTGCAGGTGCCCAAGATTCTTTCTGGGAAGTCAAG	2700
E M M A E I I S U Q U P K I L S G K U K	

Figure 1 D

TCTTGTGCCTCCGGAAATGCTATGAGCAGGGATGACTCTGGGAGCCCGGAAGCTAAG	1860
S C R L R K C Y E A G M T L G A R K L K	
AAACTGGGGAAATCTGAAACTGCAAGAGGAAGGAGAGGCTTCCAATGTCACCAGCCCCACT	1920
K L G N L K L Q E E G E A S N U T S P T	
GAGGAGCCAAACCCAGAAGCTGACGGTGTACACATTGAAGGCTATGAGTGTACGCCCATC	1980
E E P T Q K L T V S H I E G Y E C Q P I	
TTTCTGAATGTCTTTGAAGCCATCGAGCCAGGCGTGGTGTGTGCTGGACATGACAACAAC	2040
F L N U L E A I E P G U U C A G H D N N	
CAGCCCGACTCCTTTGCAGCCTTGCTCTCTAGCCTTAATGAATTGGGTGAAGGCGAGCTT	2100
Q P D S F A A L L S S L N E L G E R Q L	
GTACATGTGGTCAAGTGGGCCAAGGCCCTTGCCGGGCTTCCGCAACCTGCACGTGGATGAC	2160
U H U U K W A K A L P G F R N L H U D D	
CAGATGGCAGTCATTCACTACTCCTGGATGGGGCTCATGGTGTGGTGGCATGGGCTGGCGA	2220
Q M A U I Q Y S W M G L M U F A M G W R	
TCCTTCACCAATGTCAACTCCAGGATGCTCTACTTCGCCCCTGACCTGGTTTTCAATGAG	2280
S F T N U N S R M L Y F A P D L U F N E	
TACCGCATGCACAGTCCCGGATGTACAGCCAGTGTGTCCGAATGAGGCACCTCTCTCAA	2340
Y R M H K S R M Y S Q C U R M R H L S Q	
GAATTTGGATGGCTCCAATCACCCCGCAGGAATTTTTGTGCATGAAGGCGCTGCTGCTA	2400
E F G W L Q I T P Q E F L C M K A L L L	
TTCAAGCATTATTCCAGTGGATGGGCTGAAAAATCAAAAATTCTTTGATGAACCTTCAATG	2460
F S I I P U D G L K N Q K F F D E L R M	
AACTACATCAAGGAACCTTGATCGTATCATTGCTTGCAAGAGAAAAAATCCACATCCTGC	2520
N Y I K E L D R I I A C K R K N P T S C	
TCAGGGCGCTTCTACAGCTCACCAAGCTCCTGGACTCTGTGCACCTATTGCTCGAGAG	2580
S R A F Y Q L T K L L D S U Q P I A R E	
CTGCATCAGTTCACTTTTGACCTGCTAATCAAGTCCACATGGTGAGCGTGGACTTTCCA	2640
L H Q F T F D L L I K S H M U S U D F P	
GAAATGATGGCAGAAATCATCTCCGTGCAAGTGCCCAAGATTCTTTCTGGGAAGTCAAG	2700
E M M A E I I S U Q U P K I L S G K U K	

Figure 2 A

Canine	ATGGAGGTTAC AGTTAGGGCT AGGAGGGGTC TACCCCTGGC CCGCGTCCAA GACCTATCGA	60
Human	ATGGAGGTTGC AGTTAGGGCT GGGAGGGGTC TACCCCTGGC CCGCGTCCAA GACCTATCGA	60
Canine	GGAGCTTTCC AGAATCTGTT CCAAGAGTGTG CCGCAAGTGA TCCAGAACCC GGGCCCCAGG	120
Human	GGAGCTTTCC AGAATCTGTT CCAAGAGTGTG CCGCAAGTGA TCCAGAACCC GGGCCCCAGG	120
Canine	CACCCAGAGG CCGTGAAGCGC AGCACCCTCC GGTGCCATT T-----	161
Human	CACCCAGAGG CCGTGAAGCGC AGCACCCTCC GGTGCCATT TGTGTGTGTGT GCAAGCAGCAG	180
Canine	-----GCAGCAGCA GCAGCAGCAG CAGCAGCAGC AGGAGACAG TCCATCGGCHG	210
Human	CAGCAGCAGC AGCAGCAGCA GCAGCAGCAG CAGCAGCAGC AGGAGACTAG CCCCAG--G	237
Canine	CAGCAGCAGC AGCAGCAGGG TGAAGATGGC TCTCCCCAAG CCGAGAGCAG AGGCCCCACA	270
Human	CAGCAGCAGC AGCAGCAGGG TGAAGATGGT TCTCCCCAAG CCGATCGTAG AGGCCCCACA	297
Canine	GGCTACCTGG CTCTGGATGA GGAACAGCAG CCTTCCCAAC AGCGGTCHGC CTCCAGGGGC	330
Human	GGCTACCTGG TCCTGGATGA GGAACAGCAA CCTTCAAGC CCGAGTCCGC CCTGGAGTGC	357
Canine	CATCCGGAGA GTGCTTGGT TCCAGAGCCT GGAGTGAATT GGGCAACCG CAAGGGGGCTG	390
Human	CATCCGGAGA GAGGTGCGT CCAAGAGCCT GGAGCCGCG TGGCCGCCAG CAAGGGGGCTG	417
Canine	CAGCAGCAGC AGCCAGCACC ACCGGACGAG ATGACTCAG CTGCCCCATC CACATTGTCA	450
Human	CCGAGCAGC TCCAGCACC TCCGGACGAG ATGACTCAG CTGCCCCATC CACATTGTCC	477
Canine	CTGCTGGGCC CCACTTTCCC GGGCTTAAGT AGCTGTTCCA CCGATCTTAA AGACATCCTG	510
Human	CTGCTGGGCC CCACTTTCCC GGGCTTAAGC AGCTGTTCCG CTGACCTTAA AGACATCCTG	537
Canine	AGCGAGGGCTG GACCATGCA ACTCCTTCAG CAGCAGCGGC AGCAGCAGCA GCAGCAGCAG	570
Human	AGCGAGGGCCA GACCATGCA ACTCCTTCAG CAGCAGCGGC AG-----	579
Canine	CAACAGCAAC AGCAGCAGCA GCAGCAGCAA CAGCAGGAGG TAGTATCAGA AGGTAGCAGC	630
Human	-----GAGG CAGTATCCGA AGGCAGCAGC	603
Canine	AGCGGGAGAG CAGGGGAGGC CCGGGTGGT TCCACTCCT CCAAGGACAG TTACTAGGT	690
Human	AGCGGGAGAG CAGGGGAGGC CTCGGGGCT CCACTCCT CCAAGGACAA TTACTAGGG	663
Canine	GGCAGTTTCA CCATCTCGA CAGCGCCAAAG GAGTTGTGA AGGCAGTGTG GGTGTCCATG	750
Human	GGCAGTTTCA CCATTCTGA CAGCGCCAAAG GAGTTGTGA AGGCAGTGTG GGTGTCCATG	723
Canine	GGTTTGGGTG TGGAGGCAAT GGAACATCTG AGCCCTGGGG AACAGCTTCG GGGGGATTGT	810
Human	GGCTTGGGTG TGGAGGCAAT GGAACATCTG AGTCCAGGGG AACAGCTTCG GGGGGATTGT	783

Figure 2 B

Canine	ATGTACGCCC CACTCTGGG AGGTCCACCC GCGGTACG ---- TCCTTG CCGTCCGCTG	864
Human	ATGTACGCCC CACTTTTGGG AGTTCCACCC GCTGTGCGTC CCAGTCCTTG TGCCCCATTG	843
Canine	GCCGATGCA AAGGTTCTCT GCTGGATGAC GGGCCGGGCA AGGACACGA AGAACTGCT	924
Human	GCCGATGCA AAGGTTCTCT GCTAGACGAC AGCGGAGGCA AGAGCACTGA AGATACTGCT	903
Canine	GATATTCCC CTTTCAGGC AGGTTATGCG AAGGGGTTGG ATGGGGACAG CTTGGGCTGT	984
Human	GATATTCCC CTTTCAGGG AGGTTACACC AAGGGGCTAG AAGGCGAGAG CTTAGGCTGC	963
Canine	TCGAGCAGCA GTGAGCAGG GGGCTCCGG ACACTTGAGG TGCCATCCAC CCGTCTCTT	1044
Human	TCTGGCAGCG CTGAGCAGG GAGCTCCGG ACACTTGAGC TGCCGTCTAC CCGTCTCTC	1023
Canine	TACAGTCTG GAGCACTAGA TGAGCGGCA GCCTATCAGA GTCGAGACTA CTACAACCTT	1104
Human	TACAGTCCG GAGCACTGGA CGAGGCGGCT GCGTACCAGA GTCGGAGACTA CTACAACCTT	1083
Canine	CCCTCTCCC TAGGCGGGCC GCGTCCCCAT CCHCCACCTC CCCATCCCA CACCGGCATC	1164
Human	CCACTGGCTC TGGCGGGACC GCGGCCCCCT CCGCCGCCTC CCCATCCCA CCGTCGCATC	1143
Canine	AAGCTGGAGA ACCCTCTGGA CTATGGCAGC GCCTGGGCGG CTGCGCGGGC ACAATGCCGC	1224
Human	AAGCTGGAGA ACCCGCTGGA CTAGGCGAGC GCCTGGGCGG CTGCGCGGGC GCAATGCCGC	1203
Canine	TAGGGGGATC TGGCGAGCCT GCACGGAGCG GGTGCGAGAG GACCCAGGTC GGGCTCACCT	1284
Human	TATGGGGACC TGGCGAGCCT GCATGGGCGG GGTGCGAGCG GACCCAGGTC TGGGTCAACC	1263
Canine	TCGGCGGCA CTTCTCTCTC CTGGCACACT CTCTTCACAG CAGAGAGAGG CCAGTTGTAT	1344
Human	TCAGCGGCG CTTCTCTCTC CTGGCACACT CTCTTCACAG CAGAGAGAGG CCAGTTGTAT	1323
Canine	GG-----GG-----GG-----GG-----GG-----GC--C--CTGGGGC	1356
Human	GGACCGTGTG GTGGTGGTGG GGGTGGTGGT GGCGGCGGGC GCGGCGGGCG CCGCGGGCGG	1383
Canine	GGGAGTGGAG GCGGCGGTGC AGGCGAGCG ----GGGAT CTGTAGCCCC CTATGGCTAC	1410
Human	GGCGGGCGCG GCGGCGGGCG GCGGCGGGCG GAGGCGGAG CTGTAGCCCC CTAGGGCTAC	1443
Canine	ACTCGGCCAC CTCAGGGATT GCGGGGTCAG GAAGGTGACT TCCCTCCACC TGATGTGTGG	1470
Human	ACTCGGCCCC CTCAGGGGCT GCGGGGTCAG GAAGGTGACT TCACCACACC TGATGTGTGG	1503
Canine	TATCCGGGCG GTGTGGTGGG CAGAGTGCCC TTTCAGGTC CTAGTTGTGT CAAAAGCGAG	1530
Human	TACCTTGGCG GCATGGTGGG CAGAGTGCCC TATCCAGTC CCAGTTGTGT CAAAAGCGAA	1563
Canine	ATGGGCTCTT GGAATGGAG CTACTCCGGA CCTATGGGG ACATGCGTTT GGAAGCTGCC	1590
Human	ATGGGCCCTT GGAATGGAT CTACTCCGGA CCTATCGGG ACATGCGTTT GGAAGCTGCC	1623

Figure 2 C

Canine	AGGGACCATG TTCTACCCAT TGACTATTAC TTTCCACCC	C AGAGACCTG TCTGATCTGC	1650
Human	AGGGACCATG TTCTACCCAT TGACTATTAC TTTCCACCC	C AGAGACCTG TCTGATCTGT	1683
Canine	GGTGATGAAG CTTCTGGCTG TCACTATGGA GCTCTCAC	T GTGGAAGCTG CAAGGTCTTC	1710
Human	GGTGATGAAG CTTCTGGCTG TCACTATGGA GCTCTCAC	T GTGGAAGCTG CAAGGTCTTC	1743
Canine	TTTAAAGAG CCGCTGAAGG GAAACAGAG TACCTGTG	TG CCAGCAGAA TGATTGTACC	1770
Human	TTTAAAGAG CCGCTGAAGG GAAACAGAG TACCTGTG	TG CCAGCAGAA TGATTGTACT	1803
Canine	ATCGATAAT TCCGAAGGAA AAATTGTCCA TCTTGTG	CC TCCGGAATG CTATGAAGCA	1830
Human	ATCGATAAT TCCGAAGGAA AAATTGTCCA TCTTGTG	CC TCCGGAATG CTATGAAGCA	1863
Canine	GGGATGACTC TGGGAGCCCG GAAGCTGAAG AACTTGGG	GA ATCTGAAGT ACAGAGGAA	1890
Human	GGGATGACTC TGGGAGCCCG GAAGCTGAAG AACTTGGG	GA ATCTGAAGT ACAGAGGAA	1923
Canine	GGAGAGGCTT CCAATGT CAC CAGCCCCACT GAGGAG	CCAA CCCAGAGCT GACGTGTCA	1950
Human	GGAGAGGCTT CCAATGT CAC CAGCCCCACT GAGGAG	CCAA CCCAGAGCT GACGTGTCA	1983
Canine	CACATTGAAG GCTATGAATG TCAGCCCATC TTTCTGAATG	TCCTTGAGC CATGAGCCA	2010
Human	CACATTGAAG GCTATGAATG TCAGCCCATC TTTCTGAATG	TCCTTGAGC CATGAGCCA	2043
Canine	GGCTGGTGT GTGCTGGACA TGACACACAC CAGCCCGACT	CCTTTGACG CTTGCTCTCT	2070
Human	GGCTGGTGT GTGCTGGACA TGACACACAC CAGCCCGACT	CCTTTGACG CTTGCTCTCT	2103
Canine	AGCCTTAATG AATTGGGTGA AAGGCAGCTT GTACAT	GTGG TCAGTGGGC CAGGCCTTG	2130
Human	AGCCTTAATG AATTGGGTGA AAGGCAGCTT GTACAT	GTGG TCAGTGGGC CAGGCCTTG	2163
Canine	CCGGCTTCC GCACCTTACA CGTGGATGAC CAGATGGCAG	TCATTCACTA CTCCTGGATG	2190
Human	CCGGCTTCC GCACCTTACA CGTGGATGAC CAGATGGCAG	TCATTCACTA CTCCTGGATG	2223
Canine	GGGCTCATGG TGTGTCCAT GGGCTGGCGA TCCTTCACCA	ATGTCAACTC CAGGATGCTC	2250
Human	GGGCTCATGG TGTGTCCAT GGGCTGGCGA TCCTTCACCA	ATGTCAACTC CAGGATGCTC	2283
Canine	TACTTCGCC CTGACTGGT TTTCAATGAG TACCGCATGC	ACAAGTCCC GATGTACAGC	2310
Human	TACTTCGCC CTGACTGGT TTTCAATGAG TACCGCATGC	ACAAGTCCC GATGTACAGC	2343
Canine	CAGTGTGTCC GAATGAGGCA CCTCTCTCAA GAA	TTTGGAT GGTCCAAAT CACCCCGCAG	2370
Human	CAGTGTGTCC GAATGAGGCA CCTCTCTCAA GAA	TTTGGAT GGTCCAAAT CACCCCGCAG	2403
Canine	GAAATTTTGT GCATGAAGGC GCTGCTGCTA	TTCAGCATTA TTCCAGTGGG TGGGCTGAAA	2430
Human	GAAATTTTGT GCATGAAGGC GCTGCTGCTA	TTCAGCATTA TTCCAGTGGG TGGGCTGAAA	2463

3

Canine	AATCAAAAT TCTTTGATGA ACTTCGAATG AACTACATCA AGGAACCTTGA TCGTATCATT	2490
Human	AATCAAAAT TCTTTGATGA ACTTCGAATG AACTACATCA AGGAACCTTGA TCGTATCATT	2523
Canine	GCTTGCAAGG GAAAAAATCC CACATCCTGC TCAGGACGCT TCTACCAAGCT CACCAAGCTC	2550
Human	GCTTGCAAGG GAAAAAATCC CACATCCTGC TCAGGACGCT TCTACCAAGCT CACCAAGCTC	2583
Canine	CTGGAATCTG TGCAACCTAT TGCTCGAGAG CTGCATCAGT TCACTTTTGA CCTGCTAATC	2610
Human	CTGGAATCTG TGCAACCTAT TGCTCGAGAG CTGCATCAGT TCACTTTTGA CCTGCTAATC	2643
Canine	AAGTCCACCA TGGTGAGCGT GGACTTTCCA GAATGATGG CAGAGATCAT CTCCTGTGCA	2670
Human	AAGTCCACCA TGGTGAGCGT GGACTTTCCA GAATGATGG CAGAGATCAT CTCCTGTGCA	2703
Canine	GTGCCCAGGA TTCTTTCTGG GAAAGTCAGG CCCATCTATT TCCACACCCA GTGA	2724
Human	GTGCCCAGGA TTCTTTCTGG GAAAGTCAGG CCCATCTATT TCCACACCCA GTGA	2757

Figure 3 A

Canine	MEUQLGLGRV	YPRPPSKTYR	GAQNLFQSV	REIQNPGPR	HPEARSAAPP	GAHL	---QQQ	57
Human	MEUQLGLGRV	YPRPPSKTYR	GAQNLFQSV	REIQNPGPR	HPEARSAAPP	GASLL	LLQQQ	60
Chimpanzee	MEUQLGLGRV	YPRPPSKTYR	GAQNLFQSV	REIQNPGPR	HPEARSAAPP	GASLL	LLQQQ	60
Macaque	MEUQLGLGRV	YPRPPSKTYR	GAQNLFQSV	REIQNPGPR	HPEARSAAPP	GAHL	-----	54
Lemur	MEUQLGLGRV	YPRPPSKTYR	GAQNLFQSV	REIQNPGPR	HPEARSAAPP	GAHL	-----	54
Rat	MEUQLGLGRV	YPRPPSKTYR	GAQNLFQSV	REIQNPGPR	HPEARSAAPP	GAHL	-----	54
Mouse	MEUQLGLGRV	YPRPPSKTYR	GAQNLFQSV	REIQNPGPR	HPEARSAAPP	GAHL	-----	54
Canine	QQQQQQQE--	----T---SP	RQQQQQ-QQG	EDGSPQARSR	GPTGYLALDE	EQQPSQARSA		107
Human	QQQQQQQQQQ	QQQQE---TS	PRQQQQ-QQG	EDGSPQAHAR	GPTGYLULDE	EQQPSQARSA		116
Chimpanzee	QQQQQQQQQQ	QQQQQQQQET	SPRQQQ-QQG	EDGSPQAHAR	GPTGYLULDE	EQQPSQARSA		119
Macaque	-----QQ	QQQQQQETSP	RQQQQQ-QQG	EDGSPQAHAR	GPTGYLULDE	EQQPSQARSA		105
Lemur	-----	QQQQE---TS	PPQQQQQQQG	EDGSPQARSR	GPTGYLALDE	EQQPSQARSA		101
Rat	-----	QQRQE---TS	PRARRRQOHP	EDGSPQAHAR	GPTGYLALDE	EQQPSQARSA		101
Mouse	-----	QQRQE---TS	PRARRRQOHT	EDGSPQAHAR	GPTGYLALDE	EQQPSQARSA		101
Canine	SKGHPEAGCV	PEPGUTSATG	KGLQQQPAP	PDQDSARPS	TLSSLGPTFP	GLSSCSADLK		167
Human	LECHPERAGCV	PEPGRAUARS	KGLPQQLPAP	PDQDSARPS	TLSSLGPTFP	GLSSCSADLK		176
Chimpanzee	PECHPERAGCV	PEPGRAUARS	KGLPQQLPAP	PDQDSARPS	TLSSLGPTFP	GLSSCSADLK		179
Macaque	PECHPERAGCV	PEPGRAUARS	KGLPQQLPAP	PDQDSARPS	TLSSLGPTFP	GLSSCSADLK		165
Lemur	LECHPEAGCV	PEPGRAUARS	KGLQQQPAP	PDQDSARPS	TLSSLGPTFP	GLSSCSADLK		161
Rat	SEGHPEAGCV	PEPGRAUARS	KGLPQQLPAP	PDQDSARPS	TLSSLGPTFP	GLSSCSADLK		161
Mouse	SEGHPEAGCV	PEPGRAUARS	KGLPQQLPAP	PDQDSARPS	TLSSLGPTFP	GLSSCSADLK		161
Canine	DILSEAGTMQ	LLQQQRQQQQ	QQQQQQQQQQ	QQQQQEUSE	GSSSGARARA	AGAPTSSKDS		227
Human	DILSEAGTMQ	LL-----	-----	QQQQQEUSE	GSSSGARARA	AGAPTSSKDN		218
Chimpanzee	DILSEAGTMQ	LLQQQQQE--	-----	-----AUSE	GSSSGARARA	AGAPTSSKDN		221
Macaque	DILSEAGTMQ	LL-----	-----	QQQQQEUSE	GSSSGARARA	AGAPTSSKDN		207
Lemur	DILSEAGTMQ	LL-----	-----	QQQQQEUSE	GSSSGARARA	AGAPTSSKDS		203
Rat	DILSEAGTMQ	LLQQQQQQ--	QQQQQQQQQQ	QQQQQEUSE	GSSSGARARA	AGAPTSSKDS		219
Mouse	DILSEAGTMQ	LLQQQQQQQQ	HQQQHQQHQH	QQE---VISE	GSSSGARARA	AGAPTSSKDS		217
Canine	YLGGSTISD	SAKELCKAUS	USMGLGVEAL	EHLSPGEQLR	GDCHYAPLLG	GPPAUR--PC		285
Human	YLGGSTISD	SAKELCKAUS	USMGLGVEAL	EHLSPGEQLR	GDCHYAPLLG	GPPAURPTPC		278
Chimpanzee	YLGGSTISD	SAKELCKAUS	USMGLGVEAL	EHLSPGEQLR	GDCHYAPLLG	GPPAURPTPC		281
Macaque	YLGGSTISD	SAKELCKAUS	USMGLGVEAL	EHLSPGEQLR	GDCHYAPLLG	GPPAURPTPC		267
Lemur	YLGGSTISD	SAKELCKAUS	USMGLGVEAL	EHLSPGEQLR	GDCHYAPLLG	GPPAURPTPC		263
Rat	YLGGSTISD	SAKELCKAUS	USMGLGVEAL	EHLSPGEQLR	GDCHYAPLLG	GPPAURPTPC		279
Mouse	YLGGSTISD	SAKELCKAUS	USMGLGVEAL	EHLSPGEQLR	GDCHYAPLLG	GPPAURPTPC		277
Canine	APLAECKGSL	LDDGPGKSTE	ETREYSAPFK	GYAKGLGDS	LGCSGSSSAG	SSGTLEIPST		345
Human	APLAECKGSL	LDDGPGKSTE	ETREYSAPFK	GYTKGLEGES	LGCSGSSSAG	SSGTLEIPST		338
Chimpanzee	APLAECKGSL	LDDGPGKSTE	ETREYSAPFK	GYTKGLEGES	LGCSGSSSAG	SSGTLEIPST		341
Macaque	APLAECKGSL	LDDGPGKSTE	ETREYSAPFK	GYTKGLEGES	LGCSGSSSAG	SSGTLEIPST		327
Lemur	APLAECKGSL	LDDGPGKSTE	ETREYSAPFK	GYTKGLEGES	LGCSGSSSAG	SSGTLEIPST		323
Rat	APLAECKGSL	LDDGPGKSTE	ETREYSAPFK	GYTKGLEGES	LGCSGSSSAG	SSGTLEIPST		339
Mouse	APLAECKGSL	LDDGPGKSTE	ETREYSAPFK	GYTKGLEGES	LGCSGSSSAG	SSGTLEIPST		337

Figure 3 B

Canine	LSLYKSGALD	EARAYQSRDY	YNFPLSLGG	-PPPPPPPH	PHTRIKLENP	LDYGSAAWAA	403
Human	LSLYKSGALD	EARAYQSRDY	YNFPLALAG	-PPPPPPPH	PHARIKLENP	LDYGSAAWAA	396
Chimpanzee	LSLYKSGALD	EARAYQSRDY	YNFPLALAGP	PPPPPPPH	ARIKL--ENP	LDYGSAAWAA	399
Macaque	LSLYKSGALD	EARAYQSRDY	YNFPLALAGP	PPPPPPPH	ARIKL--ENP	LDYGSAAWAA	385
Lemur	LSLYKSGALE	EARAYQSRDY	YNFPLALAGP	PPPLPPPH	ARIKL--ENP	LDYGSAAWAA	381
Rat	LSLYKSGAUD	EARAYQSRDY	YNFPLALSGP	PHPPPTTHP	ARIKL--ENP	SDYGSAAWAA	397
Mouse	LSLYKSGALD	EARAYQSRDY	YNFPLALSGP	PHPPPTTHP	ARIKL--ENP	LDYGSAAWAA	395

Canine	AAQCRMGDLA	SLHGAGAGP	SGGSPSATT	SSWHTLFTAE	EGQLYGPCGG	SGGGAGDGG	463
Human	AAQCRMGDLA	SLHGAGAGP	SGGSPSAAAS	SSWHTLFTAE	EGQLYGPCGG	GGGGGGGGG	456
Chimpanzee	AAQCRMGDLA	SLHGAGAGP	SGGSPSAAAS	SSWHTLFTAE	EGQLYGPC--	-----GG	449
Macaque	AAQCRMGDLA	SLHGAGAGP	SGGSPSAAAS	SSWHTLFTAE	EGQLYGPC--	-----G	434
Lemur	AAQCRMGDLA	SLHGAGAGP	SGGSPSAAAS	SSWHTLFTAE	EGQLYGPC--	-----G	430
Rat	AAQCRMGDLA	SLHGGSUAGP	STGSPATAS	SSWHTLFTAE	EGQLYGPC--	-----G	445
Mouse	AAQCRMGDLG	SLHGGSUAGP	STGSPATTS	SSWHTLFTAE	EGQLYGPC--	-----G	443

Canine	-----SU	APYGYTRPPQ	GLAQEGDFF	PPDUWYPGGU	USRUPPSPS	505	
Human	GGGGGGGGGG	GGGGGERAV	APYGYTRPPQ	GLAQEGDFT	APDUWYPGGM	USRUPMPSP	516
Chimpanzee	GGGGGGGGGG	GGGGGERAV	APYGYTRPPQ	GLAQEGDFT	APDUWYPGGM	USRUPMPSP	509
Macaque	-GGGGGGGGG	GGGAGERAV	APYGYTRPPQ	GLAQEGDFT	APDUWYPGGM	USRUPMPSP	493
Lemur	-GGGGG----	TSEAGAV	TPYGYTRPPQ	GLAQEGDFF	APDUWYPGGU	USRUPMPSP	482
Rat	-GGGGS----	-SSPSDAGP	APYGYTRPPQ	GLAQEGDFF	ASEUWYPGGU	UNRUPMPSP	499
Mouse	-GGGGS----	-SSPSDAGP	APYGYTRPPQ	GLTSQESDYS	ASEUWYPGGU	UNRUPMPSP	497

Canine	CUKSEMGPM	DSYSGPYGDM	ALETARDHUL	PIDYYFPPQK	TCLICGDEAS	GCHYGALTCG	565
Human	CUKSEMGPM	DSYSGPYGDM	ALETARDHUL	PIDYYFPPQK	TCLICGDEAS	GCHYGALTCG	576
Chimpanzee	CUKSEMGPM	DSYSGPYGDM	ALETARDHUL	PIDYYFPPQK	TCLICGDEAS	GCHYGALTCG	569
Macaque	CUKSEMGPM	DSYSGPYGDM	ALETARDHUL	PIDYYFPPQK	TCLICGDEAS	GCHYGALTCG	553
Lemur	CUKSEMGPM	DSYSGPYGDM	ALETARDHUL	PIDYYFPPQK	TCLICGDEAS	GCHYGALTCG	542
Rat	CUKSEMGPM	ENYSGPYGDM	ALDSTARDHUL	PIDYYFPPQK	TCLICGDEAS	GCHYGALTCG	559
Mouse	CUKSEMGPM	ENYSGPYGDM	ALDSTARDHUL	PIDYYFPPQK	TCLICGDEAS	GCHYGALTCG	557

Canine	SCKUFFKRAA	EGKQKYLCA	ANDCTIDKFA	RKNCPSCALA	KCYEAGMTLG	ARKLKKLGNL	625
Human	SCKUFFKRAA	EGKQKYLCA	ANDCTIDKFA	RKNCPSCALA	KCYEAGMTLG	ARKLKKLGNL	636
Chimpanzee	SCKUFFKRAA	EGKQKYLCA	ANDCTIDKFA	RKNCPSCALA	KCYEAGMTLG	ARKLKKLGNL	629
Macaque	SCKUFFKRAA	EGKQKYLCA	ANDCTIDKFA	RKNCPSCALA	KCYEAGMTLG	ARKLKKLGNL	613
Lemur	SCKUFFKRAA	EGKQKYLCA	ANDCTIDKFA	RKNCPSCALA	KCYEAGMTLG	ARKLKKLGNL	602
Rat	SCKUFFKRAA	EGKQKYLCA	ANDCTIDKFA	RKNCPSCALA	KCYEAGMTLG	ARKLKKLGNL	619
Mouse	SCKUFFKRAA	EGKQKYLCA	ANDCTIDKFA	RKNCPSCALA	KCYEAGMTLG	ARKLKKLGNL	617

Canine	KLQEEGERSS	UTSPTEETTQ	KL TUSHIEGY	ECQIFLNUL	ERIEPGUCCA	GHDNNQPDSE	685
Human	KLQEEGERSS	UTSPTEETTQ	KL TUSHIEGY	ECQIFLNUL	ERIEPGUCCA	GHDNNQPDSE	696
Chimpanzee	KLQEEGERSS	UTSPTEETTQ	KL TUSHIEGY	ECQIFLNUL	ERIEPGUCCA	GHDNNQPDSE	689
Macaque	KLQEEGERSS	UTSPTEETTQ	KL TUSHIEGY	ECQIFLNUL	ERIEPGUCCA	GHDNNQPDSE	673
Lemur	KLQEEGERSS	ATSPTEESSQ	KL TUSHIEGY	ECQIFLNUL	ERIEPGUCCA	GHDNNQPDSE	662
Rat	KLQEEGERSS	AGSPTEEDPSQ	KL TUSHIEGY	ECQIFLNUL	ERIEPGUCCA	GHDNNQPDSE	679
Mouse	KLQEEGERSS	AGSPTEEDPSQ	KL TUSHIEGY	ECQIFLNUL	ERIEPGUCCA	GHDNNQPDSE	677

Figure 3 C

Canine	AALLSSLNEL	GERQLVHUVK	WAKALPGFRN	LHVDQMAVI	QYSWMGLMUF	AMGWRSTNU	745
Human	AALLSSLNEL	GERQLVHUVK	WAKALPGFRN	LHVDQMAVI	QYSWMGLMUF	AMGWRSTNU	756
Chimpanzee	AALLSSLNEL	GERQLVHUVK	WAKALPGFRN	LHVDQMAVI	QYSWMGLMUF	AMGWRSTNU	749
Macaque	AALLSSLNEL	GERQLVHUVK	WAKALPGFRN	LHVDQMAVI	QYSWMGLMUF	AMGWRSTNU	733
Lemur	AALLSSLNEL	GERQLVHUVK	WAKALPGFRN	LHVDQMAVI	QYSWMGLMUF	AMGWRSTNU	722
Rat	AALLSSLNEL	GERQLVHUVK	WAKALPGFRN	LHVDQMAVI	QYSWMGLMUF	AMGWRSTNU	739
Mouse	AALLSSLNEL	GERQLVHUVK	WAKALPGFRN	LHVDQMAVI	QYSWMGLMUF	AMGWRSTNU	737

Canine	NSRMLYFAPD	LUFNEYAMHK	SAMYSQCVRM	RHLSQEFGL	QITPQEFCLM	KALLFSIIP	805
Human	NSRMLYFAPD	LUFNEYAMHK	SAMYSQCVRM	RHLSQEFGL	QITPQEFCLM	KALLFSIIP	816
Chimpanzee	NSRMLYFAPD	LUFNEYAMHK	SAMYSQCVRM	RHLSQEFGL	QITPQEFCLM	KALLFSIIP	809
Macaque	NSRMLYFAPD	LUFNEYAMHK	SAMYSQCVRM	RHLSQEFGL	QITPQEFCLM	KALLFSIIP	793
Lemur	NSRMLYFAPD	LUFNEYAMHK	SAMYSQCVRM	RHLSQEFGL	QITPQEFCLM	KALLFSIIP	782
Rat	NSRMLYFAPD	LUFNEYAMHK	SAMYSQCVRM	RHLSQEFGL	QITPQEFCLM	KALLFSIIP	799
Mouse	NSRMLYFAPD	LUFNEYAMHK	SAMYSQCVRM	RHLSQEFGL	QITPQEFCLM	KALLFSIIP	797

Canine	VDGLKNQKFF	DELMNYIKE	LDRIACKRK	NPTSCSRAFY	QLTKLLDSVQ	PIARELHQFT	865
Human	VDGLKNQKFF	DELMNYIKE	LDRIACKRK	NPTSCSRAFY	QLTKLLDSVQ	PIARELHQFT	876
Chimpanzee	VDGLKNQKFF	DELMNYIKE	LDRIACKRK	NPTSCSRAFY	QLTKLLDSVQ	PIARELHQFT	869
Macaque	VDGLKNQKFF	DELMNYIKE	LDRIACKRK	NPTSCSRAFY	QLTKLLDSVQ	PIARELHQFT	853
Lemur	VDGLKNQKFF	DELMNYIKE	LDRIACKRK	NPTSCSRAFY	QLTKLLDSVQ	PIARELHQFT	842
Rat	VDGLKNQKFF	DELMNYIKE	LDRIACKRK	NPTSCSRAFY	QLTKLLDSVQ	PIARELHQFT	859
Mouse	VDGLKNQKFF	DELMNYIKE	LDRIACKRK	NPTSCSRAFY	QLTKLLDSVQ	PIARELHQFT	857

Canine	FDLLIKSHMU	SUDFPEMMAE	IISUQPKIL	SGKUKPIVFH	TQ		907
Human	FDLLIKSHMU	SUDFPEMMAE	IISUQPKIL	SGKUKPIVFH	TQ		918
Chimpanzee	FDLLIKSHMU	SUDFPEMMAE	IISUQPKIL	SGKUKPIVFH	TQ		911
Macaque	FDLLIKSHMU	SUDFPEMMAE	IISUQPKIL	SGKUKPIVFH	TQ		895
Lemur	FDLLIKSHMU	SUDFPEMMAE	IISUQPKIL	SGKUKPIVFH	TQ		884
Rat	FDLLIKSHMU	SUDFPEMMAE	IISUQPKIL	SGKUKPIVFH	TQ		901
Mouse	FDLLIKSHMU	SUDFPEMMAE	IISUQPKIL	SGKUKPIVFH	TQ		899